ARY
9 1952
U.S. DEPARTMENT OF

FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

Montana and Northern Wyoming Upper Missouri, Upper Columbia and Yellowstone Rivers

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of
JAN 1 1952

235883

FEDERAL-STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River Basins

Report Prepared
by

Ashton R. Codd: Hydraulic Engineer
Soil Conservation Service

and

O. W. Monson: Irrigation Engineer
Montana Agricultural Experiment Station

Division of Irrigation
Soil Conservation Service

and

Montana Agricultural Experiment Station
Bozeman, Montana

OUTLOOK FOR
IRRIGATION WATER SUPPLY
January 1, 1952

The snow-fall in the mountains so far this season is above the average amount usually found on January 1. If the remainder of the winter season will continue to bring snowstorms, there should be an excellent water supply by the first of April and May. It is too early in the season to begin forecasting for the summer.

Snow survey courses measured on or about the first of January on the Jefferson, Madison and Gallatin Rivers indicate approximately 95% above average snow pack at the present time. The main stem of the Missouri from Three Forks down-stream is close to the same figure.

The Upper Yellowstone River snow courses at Lake Canyon and Cook City in Yellowstone Park indicate only 12 to 20% above average snow pack for January, which is still good.

On the Columbia River Basin, snow surveys indicate about 50% above average conditions for this time of season. The Flathead River and Clark Fork Basins have a good start for an excellent season's water supply.

More comparative data will be available on February 1.

MONTANA SNOW SURVEYS JANUARY 1, 1952

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches) January 1 1952	Past Records 1951	1950	1949	Average Data January 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	Years
JEFFERSON RIVER													
Camp Creek Idaho 6	12-E-3	6800	Jan. 3	31	8.1	3.0	4.7	3.5	3.9	208	8.9	91	16
Kilgore			Jan. 3	30	8.2	9.0	---	5.2	4.4	184	10.9	75	--
MADISON RIVER													
Hebgen Dam	11-E-5	6550	Jan. 2	39	10.6	3.9	4.8	8.5	5.4	196	12.1	88	18
West Yellowstone	11-E-7	6700	Jan. 2	35	9.0	5.6	4.1	7.8	4.9	184	11.2	80	15
Island Park Idaho 10	11-E-10	3600	Dec.29	52	11.1	4.0	5.9	8.4	5.6	218	15.4	72	17
Valley View Idaho 9	11-E-8	6500	Dec.29	49	11.6	3.4	6.1	8.0	5.1	228	14.6	80	16
Big Springs Idaho 3	11-E-9	6500	Dec.28	57	12.5	6.1	7.1	11.3	7.1	176	20.5	61	17
GALLATIN RIVER													
New World	10-D-1	6700	Jan. 3	28	7.9	4.4	2.0	6.0	5.1	155	10.0	79	4
21-Mile	11-E-6	7150	Jan. 3	54	14.9	7.3	7.4	12.7	7.7	193	16.5	90	14
MISSOURI MAIN STEM													
Chessman Reservoir	12-C-5	6200	Jan. 2	19	4.3	1.5	1.7	3.1	2.1	205	4.6	94	17
Ten Mile Lower	12-C-2	6250	Jan. 3	25	5.3	3.8	1.7	4.2	3.2	166	6.4	83	17
Ten Mile Middle	12-C-3	6800	Jan. 4	31	7.3	5.2	3.3	6.2	4.7	155	10.3	71	18
Ten Mile Upper	12-C-4	8000	Jan. 4	35	9.3	6.3	4.1	7.7	6.0	155	13.2	71	18
MARIAS RIVER													
Marias Pass	13-A-5	5250	Jan. 3	43	11.4	7.7	10.3	9.9	7.2	158	17.5	65	18
UPPER YELLOWSTONE													
Lake	10-E-4	7850	Jan. 1	32	5.8	4.0	3.1	7.4	5.0	116	9.3	62	4
Canyon	10-E-3	7750	Jan. 1	50	8.0	5.8	5.8	7.7	7.1	112	16.5	49	7
Cook City	10-E-7	7400	Dec.31	29	5.6	3.4	2.3	6.2	4.2	133	7.6	74	6
East Entrance	10-E-6	7000	Jan. 1	30	3.8	---	---	---	---	---	14.6	26	1
Lewis Lake Divide	10-E-8	7900	Jan. 3	88	25.2	21.2	21.6	25.3	20.8	122	45.1	56	33
Thumb Divide	10-E-7	7900	Jan. 3	58	14.2	---	--	--	--	---	25.0	57	--
Aster Creek	10-E-9	7700	Jan. 3	74	19.9	---	--	--	--	---	27.5	73	33

MONTANA SNOW SURVEYS JANUARY 1, 1952

COLUMBIA BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches) Jan. 1 1952	Past Records 1951	1950	1949	Average Data January 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	Years
FLATHEAD RIVER													
Desert Mt.	13-A-2	5600	Dec.28	41	9.7	6.9	6.2	--	7.6	128	15.2	64	3
Marias Pass	13-A-5	5250	Jan. 3	43	11.4	7.7	10.3	9.9	7.2	158	17.5	65	18
Holbrook	13-B-13	4530	Jan. 2	31	7.1	---	--	---	---	---	----	--	1
CLARK FORK RIVER													
Chessman Reser.	12-C-5	6200	Jan. 2	19	4.3	1.5	1.7	3.1	2.1	205	4.6	84	17
Ten Mile Lower	12-C-2	6250	Jan. 3	25	5.3	3.8	1.7	4.2	3.2	166	6.4	83	17
Ten Mile Middle	12-C-3	6800	Jan. 4	31	7.3	5.2	3.3	6.2	4.7	155	10.3	71	18
Ten Mile Upper	12-C-4	8000	Jan. 4	35	9.3	6.3	4.1	7.7	6.0	155	13.2	71	18
Rainy Lake	13-B-6	4300	Jan. 2	40	8.0	---	---	---	---	---	----	--	1
Coyote Hill		4800	Jan. 2	33	8.0	---	---	---	---	---	----	--	1
Gibbons Pass	13-D-2	7100	Jan. 2	60	15.8	---	---	15.6	12.0	132	22.8	69	3
PEND OREILLE RIVER													
Above Burke (Idaho 1)		4100	Jan. 2	54	12.9	---	---	--	---	---	----	--	-
Lookout	15-B-2	5250	Jan. 2	85	22.7	---	16.2	24.2	21.1	108	33.0	69	3

Federal - State - Private

COOPERATIVE SNOW SURVEYS

—

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"